information. According to this displayed information update processing, it is possible to display different data on the same input and output unit every time the polygon is rotated. As a result, it is possible to execute unlimited different kinds of information display.

[0060] (C) in FIG. **7** is a form in which information display is executed by applying two adjacent sides set on a polyhedron thereto. This example of display corresponds to the example of display explained above with reference to FIG. **4**. A diamond-shaped area including two surfaces forming input and output units defined by a double line **254** shown in a polygon in (C**1**) is selected as an information display area. For example, volume operation information is displayed on these input and output units. In this structure, menus for apparatus selection or function selection or the like may be displayed. As shown in (C**2**) in FIG. **7**, two display surfaces are used as display areas for information.

[0061] For example, when operation information display for volume adjustment is executed, as described above, the user can perform volume operation by touching or rotating (tilting) the input and output units.

[0062] In this example of display, as in the example described above, for example, by repeating processing for tilting the information input and output device **100** to the left and the right according to operation by the user with a center line **255** shown in (C**2**) in FIG. **7** as a center axis, the control unit **201** is capable of executing update processing for displayed information. According to this displayed information update processing, it is possible to display different data on the same input and output unit by repeating the tilt. As a result, it is possible to execute unlimited different kinds of information display.

[0063] (D) in FIG. **7** is a form in which information display is executed by applying plural adjacent sides set on a polyhedron thereto. In this example of display, eight sides are used as display areas. An area of a polygon including eight surfaces forming input and output units defined by a double line **256** shown in a polygon in (D**1**) is selected as an information display area. For example, menus for apparatus selection or function selection or operation information is displayed on these input and output units. As shown in (D**2**) in FIG. **7**, eight display surfaces are used as display areas for information.

[0064] For example, as a specific example of operation processing, it is possible to apply the operation processing to operation for moving a cursor displayed on a PC. When the information input and output device **100** is rotated (tilted) in a direction of an arrow **257** shown in (D**2**) in FIG. **7**, it is possible to apply the operation processing to processing for moving the cursor to the left and the right. When the information input and output device **100** is rotated (tilted) in a direction of an arrow **258**, it is possible to apply the operation processing to processing for moving the cursor up and down. As control for an audio player, when the information input and output device **100** is rotated (tilted) in the direction of the arrow **257**, it is possible to apply the operation processing to processing for executing adjustment of volume. When the information input and output device **100** is rotated (tilted) in the direction of the arrow **258**, it is possible to apply the operation processing to processing for adjusting a sound quality, for example, adjusting balance of a high tone and a low tone.

[0065] In this way, the control unit **201** shown in FIG. **5** changes the control to be executed according to the information displayed on the input and output units **211**.

[0066] FIG. **8** shows an example of specific display and operation processing in executing information display by applying the belt-shaped line explained with reference to (A) in FIG. **6** thereto. (A**1**) and (A**2**) in FIG. **8** are diagrams same as those explained with reference to (A) in FIG. **6**. A belt-shaped line defined by a double line shown in a polygon in (A**1**) is selected as an information display area.

[0067] (A**3**) in FIG. **8** shows a specific example of display. In the belt-shaped display area set on the information input and output device **100**, guide indicators **301** for making it possible to identify the area are displayed. For example, the guide indicators **301** that emit light in a specific color are displayed in order to make it possible to identify the belt-shaped display area set on the information input and output device **100**. The user can rotate the information input and output device **100** in accordance with the guide indicators **301**.

[0068] In the example shown in (A**3**) in FIG. **8**, as explained above with reference to FIG. **2**, respective icons set for menus corresponding to a control object apparatus, a control object program, or the like are displayed in respective display areas of the respective sides forming the information input and output device **100**. When it is assumed that the respective icons shown in (A**3**) in FIG. **8** are selection menus for programs executed in a PC, an icon of a camera is an icon for designating execution of display and edition processing for camera photographing data stored in the PC. An icon indicating music play corresponds to an icon applied to start of a program for causing the PC to execute music play. An icon of a television corresponds to an icon applied to start of a program for causing the PC with a tuner to execute processing for watching a television.

[0069] When the user designates execution of the display and edition processing for the camera photographing data stored in the PC, as shown in (A**4**) in FIG. **8**, the user touches the input and output unit **311** in which the camera icon is displayed. According to this processing, input information is inputted to the control unit (the control unit **201** explained with reference to FIG. **5**) of the information input and output device **100**. The control unit **201** outputs request data including a command for starting an execution program for the display and edition processing for the camera photographing data to a control object apparatus (in this case, the PC) via the communicating unit **221**. According to this processing, the PC as the control object apparatus starts the execution program for the display and edition processing for the camera photographing data. In order to clearly indicate to the user that a specific icon is selected, display control for, for example, brightening only display of the input and output unit corresponding to a user selected area, flashing the display, or changing a display color of the input and output unit may be performed as shown in (A**4**) in FIG. **8**.

[0070] FIG. **9** shows a specific example of display and operation processing in executing information display by applying the pentagonal display area explained with reference to (B) in FIG. **6** thereto. (B**1**) and (B**2**) in FIG. **9** are diagrams same as those explained with reference to (B) in FIG. **6**. Five input and output units defined by a double line shown in a pentagonal area in (B**1**) are selected as information display areas.